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Monique Barbanson

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EXAMINER

NEWLIN, TIMOTHY R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/090,112	Applicant(s) BARBANSON ET AL.	
	Examiner Timothy R. Newlin	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,9-13 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,9-13 and 22-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/12/2007 have been fully considered but they are not persuasive. With respect to Rodriguez, applicant argues that Rodriguez only teaches a static system, while independent claims recite a dynamic system in which frames are dropped "in response to a determination that memory is limited." However, Rodriguez does teach a dynamic system. Paragraph 61 states,

Once the constrained resource state is invoked, the video decoder adapts to constraints on memory and bus bandwidth, reducing its consumption as necessary as imposed by the need to concurrently display graphical and textual objects. Adaptation is not fixed but dynamically adjusted.

Likewise, paragraph 83 mentions that the process of dropping pictures is "dynamic according to the resources consumed." Based on at least these two sections, Rodriguez does teach a dynamic frame-dropping method as disclosed in the disputed claims. In addition, the rejection of claims 9 and 22 addresses the limitations in more detail.

Next, applicant argues that Brooks does not teach a request to transmit specified key frames of an MPEG video, since the video in Bendinelli is not formatted in MPEG at

the time the adjustment is made. But claim 1, even as amended, does not require that the frames be I-, P-, or B- frames, only that "key frames" are or are not transmitted. In the example applicant gives from Brooks, the key frames that are specified to be transmitted are the first 10 of every 11 frames. That very same data may then be encoded into MPEG (see cols. 9 and 10, lines 57-10). The formatted MPEG frames are merely reformatted from the un-encoded data frames. Thus, when Brooks drops specified data frames, the MPEG frames that correspond to the missing data have effectively been dropped as well.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Rodriguez et al., U.S. Pub. No. 2002/0009149.

3. Regarding claim 1, Rodriguez discloses, in a system including a client that has a connection with a source, wherein the connection has a bandwidth and wherein the client has a memory, a method for displaying a video stream without suppressing the video stream, the method comprising:

the client connecting with the source to select and receive a video stream **[para. 32]**, the video stream being in the MPEG format **[para. 61]**;

decoding and processing the video stream received by the client from the source, wherein memory and resources of the client are required to decode and process the video stream **[para. 44]**;

monitoring the memory and resources of the client as the video stream is decoded and processed to ensure that the client has sufficient memory and resources to decode and process the video stream **[memory and bus bandwidth are continually computed and updated, para. 74, para. 57]**; and

upon determining that the client lacks sufficient memory and resources to decode and process the video stream, the client requesting that the source transmit only specified key frames of the MPEG video stream **[the system can specify that only frames that can be decompressed within the available bandwidth should be transmitted, para. 72, e.g.]**; and

wherein the client request to transmit only specified key frames causes the source to determine, for each frame in the video stream, whether a frame in the video stream is one of the specified key frames and which further causes the source to transmit the frame to the client when it is determined that the frame is one of the specified key

frames and to drop the frame from the video stream being transmitted to the client when it is determined that the frame is not one of the specified key frames **[each respective B-frame or P-frame is either transmitted or skipped, based on a determination of whether that frame should be dropped or skipped under the particular constraint mode of operation, para. 77; a table specifies bandwidth required for each respective B-frame, allowing the system to either drop or transmit frames that are within the specified “safe” value, paras. 72, 74].**

4. Regarding claim 2, Rodriguez discloses a method wherein the specified key frames consist of intra frames **[para. 58; Claim 13].**

5. Regarding claim 3, Rodriguez discloses a method wherein the specified key frames consist of all the intra frames and some of the predictive frames in the video stream **[decoder processes some or all of the I and P frames, para. 58].**

6. Claims 9, 11-13, 22, and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Brooks et al., US 2002/0009149 in view of Rodriguez, US 2002/0009149.

7. Regarding claims 9 and 22, Brooks discloses, in a system that receives a video stream from a source over a connection that has a connection bandwidth, a method for

displaying the video stream when the video stream requires more bandwidth than connection bandwidth, the method comprising:

connecting with the source to select and receive a video stream in the MPEG format, wherein the video stream is available in one or more versions and wherein each version requires a different bandwidth **[different versions are available with varying required bandwidth, col. 10, 1-10; see cols. 6-7, lines 24-3 for version descriptions];**

upon determining that the connection bandwidth is insufficient to support the bandwidth required by the selected video stream, the client requesting that the source transmit only specified key frames of the MPEG video stream, wherein the client request to transmit only specified key frames causes the source to determine, for each frame in the video stream, whether a frame in the video stream is one of the specified key frames and which further causes the source to transmit the frame to the client when it is determined that the frame is one of the specified key frames and to drop the frame from the video stream being transmitted to the client when it is determined that the frame is not one of the specified key frames **[requesting device may request specific bandwidth parameters such as frame rate, cols. 9-10, 63-9. Based on the request, the transcoder 500 may transmit only key (i.e. minimally necessary for a viewable display) frames, such as every 10 of 11 frames, and drop non-key frames, such as every 11th frame. Or it may transmit certain key frames twice, depending on the incoming and desired frame rate, col. 12, 51-63. Each frame of a specified frame number is either dropped or not dropped based on the client's request].**

8. Regarding claims 11 and 24, Brooks discloses a method as defined in claim 9, further comprising assessing available memory of a set top box, wherein the available memory of the set top box affects which version of the video stream is selected by the set top box **[gateway assesses format requirements of receiving devices such as set top box, col. 10, 33-46; format requirements include stb memory, col. 6, 27-31]**.

9. Regarding claim 12 and 25, Brooks discloses a method wherein negotiating with the source such that only key frames of the selected version of the video stream are downloaded from the source further comprises renegotiating which frames are downloaded from the source if the connection bandwidth changes **[frame parameters can be dynamically adjusted in response to fluctuating bandwidth during transmission, claim 16, last two limitations]**.

10. Regarding claims 13 and 26, Brooks discloses a method as defined in claim 12, wherein negotiating with the source such that only key frames of the selected version of the video stream are downloaded from the source further comprises:

monitoring the connection bandwidth **[gateway monitors bandwidth requirements of client, col. 10, 63-3]; and**

negotiating with the source such that the frames downloaded to the set top box depend on how much connection bandwidth is available **[frame parameters can be dynamically adjusted in response to fluctuating bandwidth during transmission, claim 16, last two limitations; cols. 12-13, 44-11]**.

11. Regarding claims 22 and 24-26, Brooks discloses their substantive limitations as discussed above. In addition, Brooks teaches that the method of processing streaming video can be implemented in software running on a computer **[col. 7, 41-45; col. 8, 7-13]**.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 10, 23 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al., US 7,143,432 in view of Rodriguez et al., US 2002/0009149.

14. Regarding claims 10 and 23, Brooks does not state which types of frames are to be omitted in order to adjust the required bandwidth of the video stream. Rodriguez teaches that at least some of the intra-frames are downloaded and processed as key frames in a bandwidth-constrained scenario **[decoder processes some or all of the I and P frames, para. 58]**. Rodriguez discusses the fact that intra-frames are essential, being necessary to construct subsequent P or B frames **[col. 7, et seq.]** It would have been obvious to one skilled in the art to combine the teachings of Brooks and Rodriguez because I frames are the minimal requirement to provide the user with a viewable signal while conserving as much bandwidth as possible.

15. In addition, Brooks teaches that the method of processing streaming video can be implemented in software running on a computer **[col. 7, 41-45; col. 8, 7-13]**.

16. Regarding claim 27, Rodriguez discloses, in a set top box that has a memory and a connection with a video stream source, a method for displaying a video stream when the memory of the set top box and a bandwidth of the connection do not support displaying the video stream, the method comprising:

connecting with the video stream source in order to access and display a video stream **[DHCT is connected with headend, para. 30]**;

downloading the selected video stream **[DHCT 16 receives video signals from a headend and connects to a display, para. 32]**;

monitoring the memory of the set top box as the selected video stream is decoded, wherein only key frames of the video stream are decoded if the memory is

insufficient to decode the entire selected video stream **[memory and bus bandwidth are continually computed and updated, para. 74, para. 57]**; and

Rodriguez does not explicitly describe negotiation of frame parameters based on bandwidth. Brooks teaches monitoring the bandwidth of the connection between the set top box and the source, wherein the set top box negotiates with the source to only download key frames of the video stream if the bandwidth of the connection does not support the selected video stream **[frame parameters can be dynamically adjusted in response to monitored bandwidth during transmission, claim 16, last two limitations; cols. 12-13, 44-11]**. Rodriguez does discuss bandwidth limitations in the context of streaming video **[paras. 57, 74]**. Thus, it would have been obvious to one of ordinary skill in the art to modify Rodriguez with the teaching of Brooks to monitor bandwidth in order to adjust download parameters, providing the user with the highest-quality video that fully utilizes but does not exceed available bandwidth.

17. In addition, Brooks teaches that the method of processing streaming video can be implemented in software running on a computer **[col. 7, 41-45; col. 8, 7-13]**.

18. Regarding claim 28, Rodriguez discloses a method wherein connecting with the video stream source further comprises assessing the bandwidth of the connection and the memory of the set top box before selecting a video stream from the source **[paras. 57, 58, 74]**.

19. Regarding claim 29, Brooks discloses a method wherein the selected video stream requires a bandwidth that is greater than the bandwidth of the connection between the set top box and the source **[cols. 18-19, 63-16]**.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy R. Newlin whose telephone number is (571) 270-3015. The examiner can normally be reached on M-F, 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chris Kelley/
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